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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/045,990	10/31/2001	Craig M. Kennedy	2307-056	1424

7590

07/02/2003

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EXAMINER

DINH, TUAN T

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 07/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,990

Applicant(s)

KENNEDY, CRAIG M.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 10-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's election with traverse of Group I, Specie I (claims 1-9, figure 1-3) in Paper No. 4 is acknowledged. The traversal is on the ground(s) that a subcombination of claim 1 is the same as a combination of claim 11, and a header of a instant application, which is not a surface mounted interposer. This is not found persuasive because applicant recites claim 1 as a header, and claim 11 described a circuit board assembly including the header of claim 1. The header itself of claim 1 has separate utility such as an interlaminar interposer of a multiplayer circuit board, the header can be performed as a flexible circuit board or multiplayer cable, and the circuit board assembly that including header and circuit boards, so that the header of this assembly only used limited function of this assembly, for example: motherboard.

The requirement is still deemed proper and is therefore made FINAL. Claims 10-20 are withdrawn from further consideration as being drawn to non-elected subject matter

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Hart et al. (U. S. Patent 6,435,480).

As to claims 1-3, Hart discloses a circuit card (1, column 2, line 25) capable of being a header as shown in figures 1-4, comprising

a substrate made of an insulative material (5, column 2, line 28) and having a plurality of through holes (3, column 2, line 26) formed therein extending between upper and lower sides of the substrate;

plating (copper 4, column 2, line 27) applied to the through holes to form conductive cylinders with upper and lower ends; and

a plurality of pre-formed heat re-flowable bonding members, which are solder balls or shaped solder deposits (7; 9; 10; 12) attached to corresponding upper and lower ends of the conductive cylinders.

As to claim 6, Hart discloses the header as shown in figures 1-4 wherein the solder balls are made of a 63-37 weight percent alloy of tin and lead (column 1, lines 28-29, column 4, lines 24-26).

As to claim 7, Hart discloses the header as shown in figures 1-4 wherein the substrate is formed of an FR-4 glass filled epoxy (column 2, lines 28-32).

As to claim 8, Hart discloses the header as shown in figures 1-4 wherein the conductive cylinders (3) are formed with a central axially extending hole.

As to claim 9, Hart discloses the header as shown in figures 1-4 further comprising a plurality of plugs (7) each filling the central axially extending hole of a corresponding conductive cylinder.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hart ('480) in view Stopperan (U. S. Patent 5,428,190).

Hart discloses all of the limitations of the claimed invention, except for the substrate has a C-shape including main portion extending in a longitudinal direction and a pair of legs extending in a lateral direction.

Stopperan shows a flexible circuit board disclosed in figure 2 having a C-shaped including a pair of legs extending a lateral direction.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have teaching's Stopperan to employ the header of Hart in order to provide a flexure of the header.

Allowable Subject Matter

6. Claim 5 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

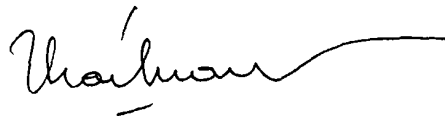
Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bitailou et al., Bindra et al., Weiss, and Bhatt et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Tuan Thai

TD
June 28, 2003